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PATENT SPECIFICATION



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Date of application and filing Complete

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COMPLETE SPECIFICATION.

Improvements in or relating to Annular Piston Liquid Meters.

We, SIEMENS & HALSKE AKTIENGESELLSCHAFT, a German Company, of Berlin-Siemensstadt, Berlin, Germany, and of Wittelsbacherplatz 4, Munich, 2, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention is for improvements in or relating to annular-piston liquid meters comprising a measuring chamber of known capacity.

In contrast to meters operated by a propeller blade, which determine the quantity of water flowing through the meter from the speed of the blade, meters operated by annular pistons measure directly the quantities of water present in a measuring chamber of known capacity.

Annular-piston operated meters at present known are so constructed that the stream of water enters the measuring chamber on one side and leaves from the opposite side thereof.

In this known construction, the housing of the meter is of such complicated design that it cannot be produced, for example, by die casting, but only by sand casting.

30 The present invention has for its object the provision of a meter of the annular-piston type which has a simpler form of housing enabling it to be produced by die casting, the measuring chamber being incorporated in the said housing. With the simpler design it is found that in addition to the fact that it can be produced by die casting, substantially less material is required. With a view to saving material, a relatively deep transparent dome containing the metering and indicating devices is provided above the measuring chamber.

According to the present invention there is provided an annular-piston liquid meter 45 in which a stream of liquid enters and leaves the measuring chamber at the bottom and the inlet and outlet channels are separated by a partition arranged at the bottom of the housing, wherein the measuring chamber is arranged in suspended fashion in the housing and that there is provided between the bottom of the measuring chamber and the housing, including the partition of the housing, a rubber packing having two throughflow apertures, the said rubber packing being of such form that the inlet and output passages formed in the walls of the measuring chamber and in the housing walls together with the partition are thereby separated from one another in fluid-tight fashion.

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A further advantage obtained according to the present invention consists in arranging the inlet and the outlet openings in the same plane either above or below the measuring chamber, whereby the overall length of the meter is greatly reduced.

According to the present invention there is provided an annular-piston liquid meter having a measuring chamber of known capacity wherein a stream of liquid enters and leaves the measuring chamber through separated inlet and outlet openings disposed on the same side thereof.

The present invention will be more particularly described with reference to the accompanying drawing which illustrates in cross-section an embodiment of the present invention, wherein only the details necessary for a clear appreciation of the present invention have been particularly indicated.

Referring to the drawing a stream of liquid to be measured is passed through an inlet 1 into a housing 8 and thereafter passes through a perforated plate 12 into a compartment 13 of the measuring chamber 7. Mounted in the measuring chamber 7 is an annular-piston 14, to which is imparted a gyratory movement in a manner known *per se* which effects the metering operation. The liquid leaves the measuring chamber 7 through an outlet aperture arranged in the lower part 6 thereof. The outlet aperture is staggered in relation to

Price 4s 6d

the inlet aperture 3. The liquid thus enters and leaves the measuring chamber 7 on the same side thereof. The liquid passes through a second perforated plate 15 and leaves through an outlet 2 which lies in the same plane as the inlet 1. The measuring chamber 7 is arranged in a suspended manner in the housing 8, and bears at its upper end 16 upon a flange formed in the housing 8, while it is sealed at its lower end from the housing 8 by means of rubber packing 9.

The constructional form illustrated constituted a so-called wet instrument, in which the liquid passes through an aperture 17 into an upper part of the meter, which is covered by a dome 11. The dome 11, as hereinbefore mentioned, extends to a relatively great distance in a downwardly direction, whereby a considerable saving of material employed to form the housing is effected. The dome 11, together with a cover 18, the top part of the measuring chamber 7 and the housing 8 are held together by a threaded ring 19 which are packed with respect to one another at the appropriate places. A partition 5 in the housing is so arranged that the lower part of the housing is divided into two symmetrical compartments, whereby the advantage is afforded that identical plates 12 and 15 can be provided on both sides.

What we claim is:—

1. An annular-piston liquid meter in which a stream of liquid enters and leaves the measuring chamber at the bottom and the inlet and outlet channels are separated

by a partition arranged at the bottom of the housing, wherein the measuring chamber is arranged in suspended fashion in the housing and that there is provided between the bottom of the measuring chamber and the housing, including the partition of the housing, a rubber packing having two throughflow apertures, the said rubber packing being of such form that the inlet and output passages formed in the walls of the measuring chamber and in the housing walls together with the partition are thereby separated from one another in fluid-tight fashion.

2. An annular-piston liquid meter as claimed in Claim 1 wherein the metering and indicating devices arranged above the measuring chamber lie within a transparent dome (of synthetic material, glass or the like) which is arranged above the cover of the measuring chamber and at the same time takes up the water pressure in the case of wet instruments.

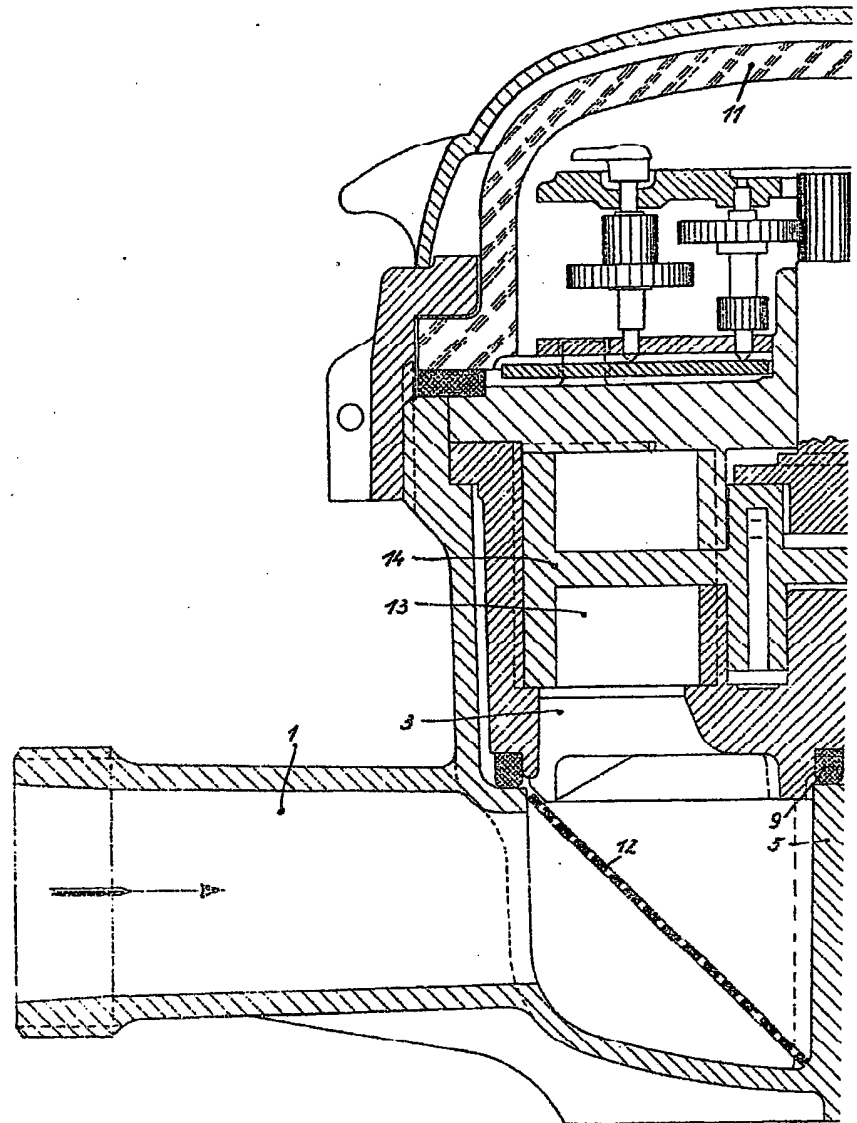
3. An annular-piston liquid meter as claimed in Claim 1 or Claim 2 wherein the entire inner space from the upper sealing surface to the bottom of the housing and the inlet and outlet ducts are tapered in the direction of the partition of the housing.

4. An annular-piston liquid meter, constructed, arranged and adapted to operate substantially as hereinbefore described with reference to the accompanying drawing.

Dated this 3rd day of August, 1950.

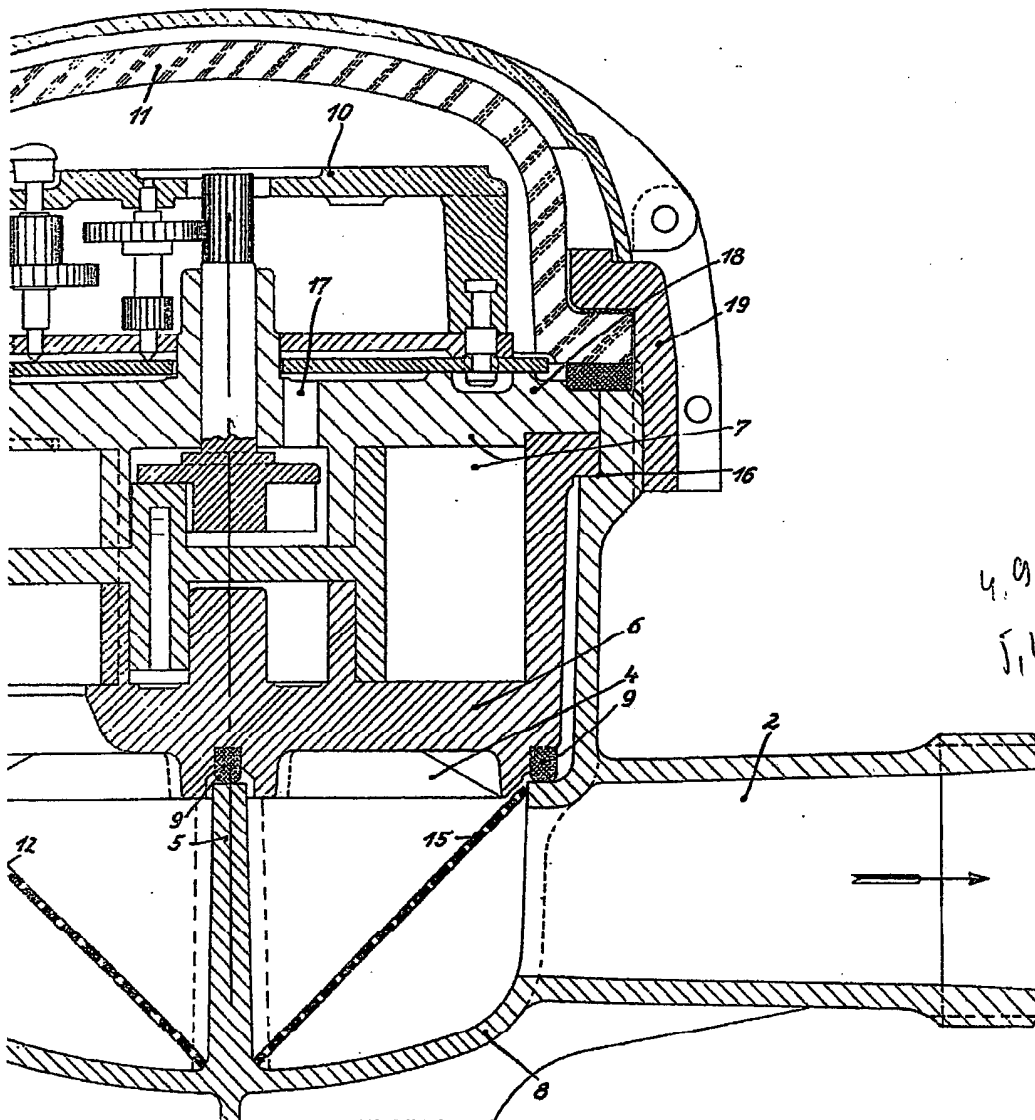
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